# ARJUNA JEE 2023

## Mole Concept

**DPP-08**

**1.** The mole fraction of water in a solution containing 117 g sodium chloride and 900 g of water is ?
(1) 0.0632 (2) 0.038
(3) 0.9615 (4) 1.000

**2.** An aqueous solution of glucose is 10% (w/v). The volume in which 1 mole of glucose is dissolved, will be
(1) 181 (2) 91
(3) 0.91 (4) 1.81

**3.** The molality of a sulphuric acid solution is 0.2. Calculate the total weight of the solution having 1000 gm of solvent.
(1) 1000 g (2) 1098.6 g
(3) 980.4 g (4) 1019.6g

**4.** What volume of a 0.8 M solution contains 100 millimoles of the solute?
(1) 100 mL (2) 125 mL
(3) 500 mL (4) 62.5 mL

**5.** When $W_B$ gm solute (molecular mass $M_B$) dissolves in $W_A$ gm solvent. The molality M of the solution is
(1) $\frac{W_B}{W_A}\times\frac{M_B}{1000}$ (2) $\frac{W_B}{M_B}\times\frac{1000}{W_A}$
(3) $\frac{W_A}{W_B}\times\frac{1000}{M_B}$ (4) $\frac{W_A\times M_B}{W_B\times 1000}$

**6.** For preparing 0.1 M solution of $H_2SO_4$ in one litre, we need $H_2SO_4$
(1) 0.98 g (2) 4.9 g
(3) 49.0 g (4) 9.8 g

**7.** 8 g NaOH is dissolved in one litre of solution, its molarity is
(1) 0.8 M (2) 0.4 M
(3) 0.2 M (4) 0.1 M

**8.** Which of the following concentration terms is temperature dependent?
(1) % by mass
(2) Mole fraction
(3) Mass/volume ratio
(4) Molality

**9.** Mole fraction of A in $H_2O$ is 0.2. The molality of A in $H_2O$ is :
(1) 13.9 (2) 15.5
(3) 14.5 (4) 16.8

**10.** How many g of NaOH will be needed to prepare 250 mL of 0.1 M solution:
(1) 1 g (2) 10 g
(3) 4 g (4) 6 g

**11.** The number of moles of solute per kg of a solvent is called its
(1) Molarity
(2) Normality
(3) Molar fraction
(4) Molality

# Answer Key

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|---|---|---|---|
| **1.** | **(3)** | **7.** | **(3)** |
| **2.** | **(4)** | **8.** | **(3)** |
| **3.** | **(4)** | **9.** | **(1)** |
| **4.** | **(2)** | **10.** | **(1)** |
| **5.** | **(2)** | **11.** | **(4)** |
| **6.** | **(4)** | | |

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